

STATE OF MONTANA JOB DESCRIPTION



Montana state government is an equal opportunity employer. The State shall, upon request, provide reasonable accommodations to otherwise qualified individuals with disabilities.

Job Title: Computer Systems Analyst **Working Title:** Engineering Project Scheduler
(EPS) Technical Specialist

Position Number: 541 19004 **Pay Band:** 6

Division and Bureau: Highways & Engineering Division **Job Code Number:** 151516

Section and Unit: Engineering Information Services Section **Location:** 2701 Prospect Avenue
Helena, MT 59601

FLSA Status: ☒ **Non-Exempt** ☐ **Exempt**

Description of the Work Unit:

The Montana Department of Transportation's (MDT) Highways and Engineering Division prepares projects for bidding and coordinates highway construction through the Preconstruction and Construction functions. The Engineering Information Services Section (EISS) is responsible for updating, customizing and maintaining the Computer Aided Design (CADD) and Engineering Project Scheduler (EPS) systems in a competent, functional and focused manner and for providing support, system development, installs, implementation and training for system users.

Job Overview:

The **EPS** Technical Specialist is responsible for developing and administering the project scheduling system and associated business processes to support and improve the planning and development of construction projects; managing system development and enhancement projects; and providing analysis, training and technical assistance.

Essential Functions (Major Duties or Responsibilities): *These job functions are the essential duties of the position and are not all-inclusive of all the duties the incumbent may be assigned.*

A. System Customization & Administration **40% of Time**

Customize, install, implement and administer the Engineering Project Scheduler system to support and improve preconstruction project planning and development business processes and to manage EPS interfaces with other agency systems (e.g., the Program Project Management System and the CARES and Billing Voucher accounting systems etc....).

1. **Research and evaluate business processes and user objectives** to plan the customization, deployment and maintenance of the EPS system. This includes leading business process meetings, identifying necessary system enhancements or modifications to meet MDT business needs; researching system functions and technical documentation; assessing existing data, alternatives for accessing and integrating data, and the resource requirements (e.g. budget and staff) of various alternatives; and negotiating changes to systems or processes to integrate system and user

requirements. Develop recommendations to the Section Supervisor on plan components that impact the workload of other staff or have significant budgetary impacts.

2. **Perform and coordinate requirement analysis and system definition** work to determine and document information technology development, enhancement or modification requirements and the proper methods of implementing projects within available resources. This includes gathering requirements from multiple stakeholders, assessing system resources and applications, determining internal and external coordination needs, and developing specification and requirements analysis documentation.
3. **Develop forms and reports by determining the proper language and required command files, identifying how systems and modules interact with each other, and coding programs** by translating design specifications into computer language and command files. Finalize data elements used by the system and associated existence constraints by designing files using descriptions of all information elements and the definitions of the files; defining data stores and/or database definitions; and designing detailed record formats and record relationships.
4. **Coordinate the development and implementation of system enhancement and documentation standards** to provide effective communication, clear understanding of business issues, and a sound basis for training and user documentation throughout the systems development lifecycle. This includes coordinating with the MDT Information Services Division, researching information systems policies and practices to develop standards, writing database procedures, disseminating standards to project staff, documenting existing business and systems activities and problems, and maintaining instructional materials, user documentation, and system, program and operations manuals.
5. **Develop prototypes, simulations, and models** to demonstrate what new systems will look like and how they will function. Present prototypes to users and computer specialists to explain proposed system designs, solicit feedback and direction regarding functions and operations, and to identify and resolve problems.
6. **Determine the most effective method to acquire or migrate data** from established or new sources and secure access to the data. This involves assessing available databases, data sources, and intended use of the data; evaluating data integrity, compatibility, and related issues to determine the impacts of conversion on existing data; modifying system implementation plans as needed; and identifying approaches to combine information from multiple data sources to enhance the utility and value of the information (i.e., value-added data integration).
7. **Direct unit, integration, and system testing** to ensure that all applications function properly. Direct unit testing to ensure that changes in portions of programs do not affect program capabilities; direct integration testing to ensure that programs function properly when multiple programs are integrated into the new system; and direct system testing when all intended changes have been made to ensure that the system as a whole functions as required. Direct the release of applications to users for testing. Respond to reports of problems encountered by users, and make necessary changes to ensure proper system functioning.
8. **Coordinate system implementation** to ensure the effective integration of new or modified system components with the agency's business and information systems environment. This includes determining sequences, timelines, and staff roles; developing and executing implementation plans; monitoring compliance with applicable standards; minimizing user disruption; and resolving technical or procedural problems.

9. **Develop, recommend, and implement approved system security and recovery procedures** to ensure appropriate system access by authorized users and protect the integrity of stored data against system failures, viruses, security breaches, and other problems. This involves working with ISD to determine and implement user access, security, and data and production recovery systems; monitoring systems; and coordinating responses to security breaches or recovery from system failures as necessary.
10. **Coordinate and perform system and database upgrades and enhancements** to maintain and improve system functionality. This includes determining and addressing user impacts, ensuring continuity of service, customizing functions as necessary, coordinating major system modifications with ISD, and ensuring systems meet MDT client needs.
11. **Design and implement custom reports** to meet specific client business needs and information requests. This includes evaluating customer needs and accessing, configuring, and retrieving data through the design of new query tools and other system functions or the modification of existing scripts.
12. **Develop and implement policies and procedures for new systems** to ensure proper operation, maintenance, and security of system structures and data. This involves evaluating system documentation, user business processes, and statewide policies; developing, documenting, and disseminating policies and procedures; and providing technical assistance and guidance in their implementation and application.

B. Project Management

30% of Time

Manage Engineering Project Scheduler (EPS) system implementation and enhancement projects to ensure effective use of agency and external resources in meeting user needs and statutory requirements.

1. **Develop project plans** to meet customer needs in an effective and timely manner. This involves prioritizing projects based on the importance of the function, time required, and staff availability; identifying resource requirements (e.g. budget and staff) associated with activities or projects; leading business process and system enhancement meetings to formulate plans for improving division business processes; and developing recommendations to the Section Supervisor on plan components that impact the workload of other staff or have significant budgetary impacts.
2. **Manage system development tasks and milestones** to ensure project completion according to plan and to identify and resolve problems or barriers to timely completion. This includes defining project team member roles, managing expectations, ensuring projects have clear goals, identifying and addressing barriers to progress, monitoring deliverables, investigating and resolving problems, and tracking and reporting on project progress.
3. **Coordinate the work of Computer System Analysts, product vendors, consultants, and engineering division staff** to successfully develop and implement project scheduling systems and to enhance engineering operations and data management. This includes planning projects, coordinating EISS involvement in bidding and contract administration as necessary, facilitating project planning and progress meetings, keeping management apprised of issues and status, and resolving problems.
4. **Monitor the work of team members and the effectiveness of projects and management plans** to ensure compliance with agency standards and plans. Monitor project development and

implementation processes and examine user difficulties to ensure project teams meet established objectives and user needs.

5. **Provide advanced technical guidance** in explaining business process to users as they appear in the new system. This involves studying users' business processes to determine how new applications will impact them, overseeing training provided to users, and developing or reviewing user documentation.

C. Analysis, Training and Technical Assistance 20% of Time

Provide data analysis, training and technical assistance on project scheduling and associated systems to ensure proper system functions and user competence and to identify needed system modifications or enhancements.

1. **Actively monitor and evaluate new technologies, trends, and other issues** related to system and application development, maintenance, and troubleshooting approaches to maintain a high level of professional and technical expertise, anticipate future technological needs, and determine how new methods and technologies may enhance future project management system development and maintenance activities.
2. **Coordinate the configuration, installation and implementation of new equipment and upgrades (e.g., hardware, printers, and communication devices) with ISD** to effectively support project management systems. This involves ensuring existing applications effectively integrate with new systems and hardware; testing systems and devices and resolving installation issues; and providing direction to technical staff and users.
3. **Develop and deliver training programs** on new system functions and operations to ensure the proficiency and competency of users. This involves assessing user training needs, developing training curricula, delivering training, and overseeing user training provided by unit specialists, vendors, and others. Assess training outcomes and effectiveness and modifies programs as necessary to meet the changing needs of Preconstruction staff.
4. **Provide problem resolution and user support for technical problems involving database and software issues and business process questions** to ensure continuity of services and the integrity of data. Prioritize user support based on impacts to business operations, logistics, options to keep the system functioning, and impacts on related systems. Resolve user problems by establishing methods and using diagnostic tools to isolate problems; analyzing system configurations, network components, and communication issues; and developing solutions to correct problems. This includes observing functions to verify correct operations and detect errors; evaluating database objects and software configurations; escalating problems to EPS staff, ISD, and vendors as necessary; and following-up to ensure problems are resolved. Maintain records of daily transactions, problems and actions taken to identify system problems or trends.
5. **Develop and manage service level agreement to ensure adequate support for division business processes.** This includes evaluating division business needs, project deadlines and requirements, business cycles, and data processing requirements to develop system support, contingency, and backup plans in coordination with ISD and vendors.

D. Other Duties as Assigned

10% of Time

Perform a variety of other duties as assigned by the Section Supervisor and Engineering Operations Bureau chief in support of the department mission and division objectives including providing backup for other staff; participating in ongoing training and educational programs; and related duties as assigned.

Minimum Qualifications (Education and Experience):

Requires education and experience equivalent to a Bachelor's degree in computer science, engineering, project management, or a related field plus five (5) years of progressively responsible information systems development/maintenance and project management.

Required Knowledge and Skills:

The position requires an advanced knowledge of the principles and practices of computer science including application development, database administration and database objects, project management, business process analysis, software development and configuration, user support and training, documentation, data management products, object-oriented data management tools, system security and recovery, and systems analysis, design, testing and documentation techniques and practices. The position requires knowledge of preconstruction business processes including pre-construction and construction project planning and administration, design contract administration, engineering standards and processes, and accounting business processes.

The position requires skill in organizing and prioritizing work; developing project plans, developing goals and standards; configuring, developing and supporting commercial off the shelf (COTS) software; communicating effectively to individuals and work groups with differing levels of technical understanding; developing documentation and reports; managing activities, tasks and milestones for major projects; conducting research and analysis; developing solutions to technical problems; providing training and technical assistance; communicating effectively both verbally and in writing; and in maintaining effective working relationships with other employees, vendors and agencies.

Special Requirements:

List any other special required information for this position

- | | |
|--|---|
| <input type="checkbox"/> Fingerprint check | <input type="checkbox"/> Valid driver's license |
| <input type="checkbox"/> Background check | <input type="checkbox"/> Other; Describe |

The specific statements shown in each section of this description are not intended to be all inclusive. They represent typical elements and criteria considered necessary to perform the job successfully.

Signatures

My signature below indicates the statements in the job description are accurate and complete.

Immediate Supervisor	Title	Date
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Division Administrator	Title	Date
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My signature below indicates that I have read this job description.

Employee	Title	Date
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Human Resources Review

My signature below indicates that Human Resources have reviewed this job description for completeness.

	HR Manager	
Signature	Title	Date
